



Portland Harbor

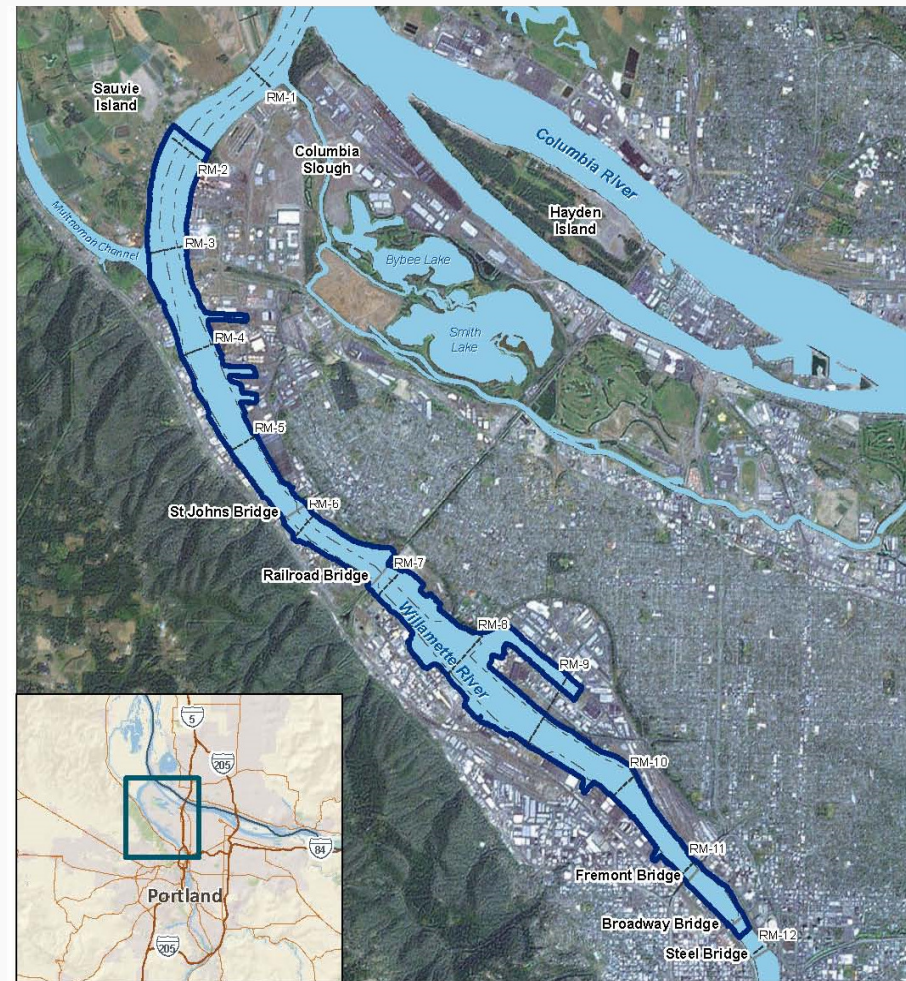
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Region 10**

September 18, 2015





- Listed on the National Priorities List in 2000
- Spans 10 river miles of the Willamette River
- Forty-three contaminants contribute to unacceptable risk, most notable are:
 - PCBs
 - PAHs
 - DDT and similar pesticides
 - Dioxins/Furans





Portland Harbor Background



- Challenges at this Site
 - Dynamic system
 - Controlling risk is complex
 - Large Area
 - Multiple Sources and Contaminants
- Standard practice includes combining dredging, capping and natural recovery to reach Preliminary Remediation Goals



Importance of Cleanup – Human Risks

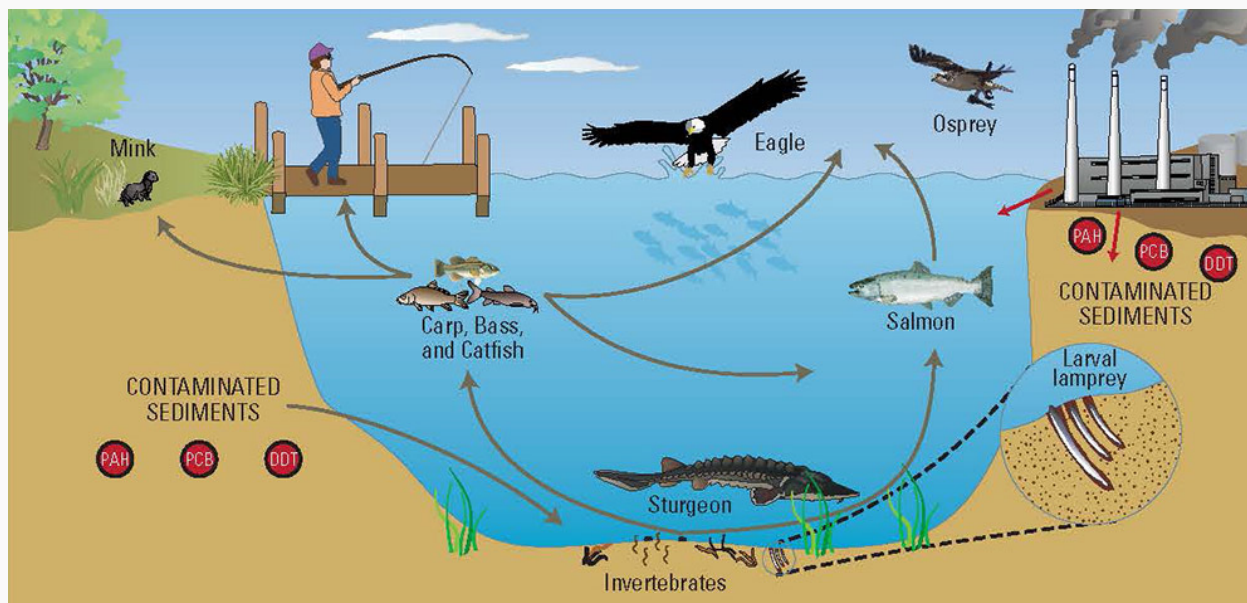


- Exposure by direct contact or fish consumption
- Certain species of resident fish are highly contaminated and local fish advisory instructs people not to eat those fish.
- Highest risks to infants of nursing mothers that regularly consume resident fish from the river



Importance of Cleanup – Ecological Impacts

- Fish and shellfish are at risk from PCBs, DDT and metals
- Birds and mammals are at risk from PCBs and dioxin
- Benthic organisms at risk from metals, PCBs, DDT and PAHs





The Willamette River has diverse value:

- A working river for development and prosperity of Portland,
- A recreation and entertainment hub,
- An important fishery and cultural landmark,
- A wildlife habitat and symbol of abundant nature





Feasibility Study Alternatives at a Glance

Alt	Dredge Volume	Dredge Areas	Dredge and Cap Areas	Cap Areas	EMNR	MNR ³	Cost	Years to Complete Construction
	(Cu Yd)	(Acres)	(Acres)	(Acres)	(Acres)	(Acres)		
B	614,000 to 819,000	70	11	9	103	2,250	\$790 M	4
D	1,173,000 to 1,564,000	131	21	22	88	2,185	\$1.1 B	5
E	2,061,000 to 2,749,000	203	33	34	59	2,121	\$1.5 B	7
F	4,383,000 to 5,843,000	374	50	90	24	1,912	\$2.1 B	12
G	6,865,000 to 9,154,000	544	73	163	15	1,655	\$2.5 B	18

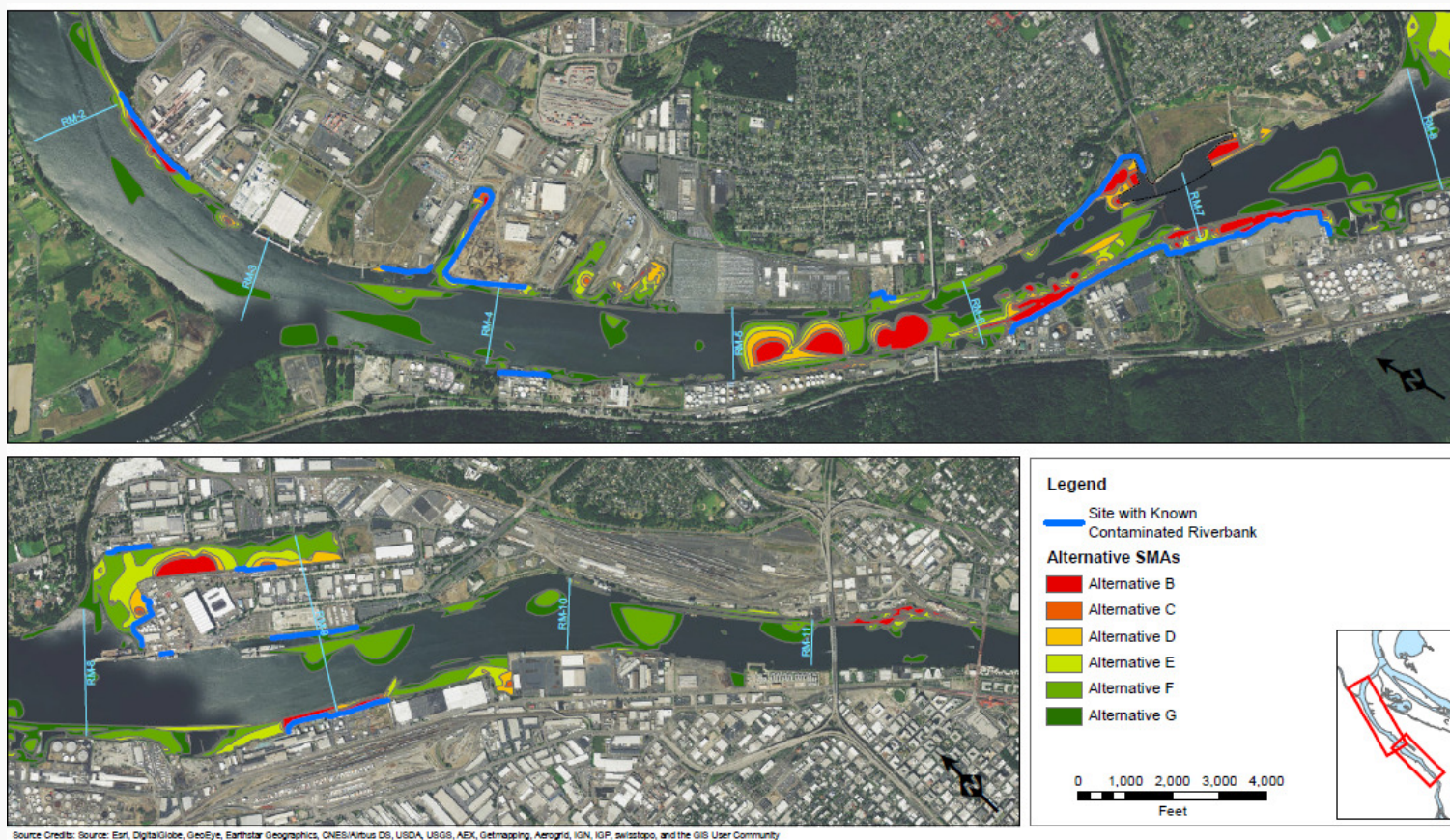


Figure 3.3-13. Sediment Management Areas



Seven NCP criteria for alternative selection analysis

- Overall protection of human health and the environment (threshold)
- Compliance with ARARs (threshold)
- Long-term effectiveness and permanence
- Reduction in toxicity, mobility & volume by treatment
- Short-term effectiveness
- Implementability
- Cost



Evaluating the Alternatives

- Extent each alternative reduces toxicity, mobility or volume through treatment and addresses Principal Threat Waste (PTW)
- How many caps are in each alternative that restrict future land uses
- Extent each alternative relies on natural recovery
- Risk reduction at the end of cleanup construction
- Minimize exposure to ecological receptors until cleanup levels are met



- Least costly alternative that addresses most Principal Threat Waste
- Provides reasonable certainty about the ability for the river to natural recovery and reduce risks
- Provides more certainty of protectiveness through active remediation with less reliance on institutional controls
- Provides protection for some wildlife by the end of construction



Process and Progress—Upcoming Key Dates

- **September 18, 2015** – Provide conceptual remedy to stakeholder groups
- **November 18-19, 2015** – EPA National Remedy Review Board review with CSTAG
- **January and February 2016** – Government to Government consultation with six Federally Recognized Tribes
- **Spring 2016** – Proposed Plan and Formal Public Comment Period